STATE OF NORTH CAROLINA, DEPARTMENT OF ADMINISTRATION DIVISION OF PURCHASE AND CONTRACT AGENCY SPECIFIC TERM CONTRACT

Contract Title:	Subsurface Exploration Drill
Bid (Contract) Number:	201400398
Commodity Code:	760-20
Effective Dates:	April 24, 2014 through April 23, 2017-Non-Renewable
P&C Administrator:	Bahaa Jizi
Phone:	919-807-4520
E-Mail:	Bahaa.jizi@doa.nc.gov
Last Updated:	

Items on Contract

Product Description	Price/UOM	Contractor
SEE ATTACHED PRICING SCHEDULE		

Contractor

Contractor Information					
Company	Central Mine Equipment Co.				
Address	4215 Rider Trail North				
City, State, Zip Earth City, MO 63045					
URL					
Contractor C	ontact				
Name	David Bloodworth				
Phone	800-325-8827 (314)-291-7700				
E-Mail	info@cmeco.com				

Taxes

Prices shown do not include North Carolina sales or use taxes.

DELIVERY:

The Contractor will be required to pick up the chassis provided by NCDOT at the Fleet & Material Management equipment yard located in Raleigh, NC and return the completed unit to that same location after installation of the drill.

Transportation Charges

All goods shall be delivered FOB DESTINATION. Prices herein include shipping.

Warranty

The contractor guarantees items to be free from any and all defects in material, packaging, and workmanship and agrees to replace and/or repair defective items promptly at no charge to the State, for the period as stated in the mfg. standard warranty from date of acceptance. This statement is not intended to limit any additional coverage which may normally be associated with a product.

BID No. 201400398 BIDDER: Central Mine Equipment Company

FURNISH AND DELIVER:

A combination auger, core, rotary type boring and subsurface exploration drilling machine in accordance with the attached specifications & questionnaire. This bid includes installation of the drill unit on a chassis provided by NCDOT. Units shall be furnished with the published standard equipment whether specified or not. For reference purposes only, this specification is based on a CME 45C drill, manufactured by Central Mine Equipment Company.

The successful bidder will be required to pick up the chassis provided by NCDOT at the Fleet & Material Management equipment yard located in Raleigh, NC and return the completed unit to that same location after installation of the drill.

The unit offered shall be new, unused and a current model under standard production by the manufacturer.

SPECIAL NOTE:

This bid is to establish a 3 year contract for the items below. No quantities are guaranteed. Once the contract has been awarded, NCDOT will determine quantities and issue purchase order(s) as needed throughout the contract period.

ITEM	QTY.	UOM	DESCRIPTION	UNIT COST	TOTAL EXTENDED COST
1.	1	ea	SUBSURFACE EXPLORATION DRILL		
				\$ <u>147,803</u>	\$ <u>147,803</u>

TOTAL ALL ITEMS \$ 147,803.00

NCDOT Chassis

For bidder information purposes, the chassis NCDOT intends to furnish for the installation of the drill covered in this bid spec will be as follows:

CHASSIS: New, current year model FORD TRUCK - Model F-550 Super Duty

19,500 pound GVW 165" WB 84" CA 4WD 7.000 pound front drive axle, with manual locking hubs 7,000 pound front springs 13,660 pound rear axle, 4.88 ratio, with limited slip 13,660 pound rear springs, including auxiliary springs 6.7L diesel engine, 400 HP, 725 ft-lbs torque 6-speed automatic transmission 2-speed transfer case LT225/70SR19.5G tires All-terrain tread 19.5 x 6 disc wheels Hydraulic power brake system 40 gallon fuel tank

BID No. 201400398

BIDDER: __Central Mine Equipment Company

Engine block heater 17.8 SM frame, 36,000 psi Rear axle spacers (86S option) 130 amp alternator 2 - 750CCA batteries 40-20-40 seat with console Front and rear shock absorbers BIDDER: __Central Mine Equipment Company

1711B_14 February 27, 2014

Section 1: GENERAL DRILL SPECIFICATIONS

This specification is for the purchase of a combination auger, core, rotary type boring and subsurface exploration drilling machine. Units furnished under this contract shall be installed by the successful bidder on chassis' supplied by NCDOT. For reference purposes only, this specification is based on a CME 45C drill, manufactured by Central Mine Equipment Company.

The unit offered shall be new, unused and a current model under standard production by the manufacturer.

	Requested	Offe	red				
	Drill Manufacturer	Central	Mir	ne	Equipme	ent	Company
	Drill Model	CME-450	!				
a.	Unit(s) to be installed and made ready for operation by the successful bidder on chassis provided by NCDOT.	ul	Yes	X	No		
b.	The successful bidder will be required to pick up the chassis provided NCDOT at the Fleet & Material Management equipment yard located Raleigh, NC and return the completed unit to that same location after installation of the drill.	l in	Yes	Ň	No		
c.	The drill shall be a self-contained unit having a single engine power source.		Yes		No [
ď.	The power shall be appropriately directed to the hydraulic system and mechanically-driven drill head.	d	Yes		No [
₽.	A hydraulically actuated folding upright drill frame with twin hydraulic cylinders shall be supplied.		Yes		No [
f.	The drill unit shall be thoroughly field tested and ready for immediate continuous operation at time of delivery.		Yes	X	No [
g.	The drill shall have been in production for at least two years.		Yes	X)	No [
Sec	etion 2: <u>ROTARY DRIVE</u>						
а.	The drill transmission shall have at least four speeds forward and one speed reverse.		Yes	Ä	No [
Э.	The transmission shall be mounted stationary on the drill main base to with a heavy-duty clutch immediately adjacent to the transmission poinput.	wer	Yes	X	No [
.	The maximum drill spindle torque shall exceed 3,390 foot-pounds in gear.		Yes	X	No [
d.	Rotational speeds of the drill spindle shall range from at least 100 RF first gear to more than 640 RPM in fourth gear at 2,300 engine RPM.		Yes	X	No [

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The output of the transmission shall power a single speed right angle Yes X Nο f. The right angle drive output shall turn a drive shaft connected to the rotary $\sum_{i=1}^{n} a_i$ Yes Nο The rotary box shall be stationary with respect to the drive head travel. Yes X No The rotary box shall be grease packed. X h. Yes Nο The minimum rotary box chain size shall be double 80 series. X i. Yes No The rotary box shall turn a rotary drive bar that has a square cross section X of at least 1.75 inches a side and shall be made of heat-treated alloy steel. Yes No The drill shall be equipped with a heavy-duty auger drive universal joint \mathbf{X} and 1-5/8 inch hexagon drive socket. Yes No Provision against shock overload to the rotary drive shall be accomplished X through an easily adjustable torque-limiting clutch. Yes Nο Section 3: VERTICAL DRIVE The vertical drive shall consist of two double-acting hydraulic feed cylinders with an overall stroke or travel of at least 68 inches. Yes XNo b. The feed cylinders shall have a point of thrust centered upon the axis of the drill spindle. X No Yes The feed slide bushings shall be split for ease of removal and X replacement. Yes Nο The vertical drive shall have a maximum downward thrust of not less than 13,650 pounds and an upward or retract force of not less than 19,600 pounds. Yes X Nο The feed cylinders shall have a minimum piston rod diameter of 1.375 inches to withstand compressive forces when retracting augers from the XYes No ground without rotation. f. Hydraulic gauges shall be provided on the control panel at the left rear of the drill to indicate in pounds per square inch the hydraulic feed pressure and system pressure. Yes XNo Hydraulic controls shall be furnished for varying the feed rate and down Xpressure. Yes No \Box The maximum rate of feed shall not be less than 79 feet per minute down h. and 55 feet per minute up. X Yes i. Two feed levers shall be provided. Yes Χ No j. One feed lever shall be of the spring return type permitting standard rates of feed and retract. Yes X Nο The first feed lever shall not be affected by the dial control settings used X No 🗌 with the second feed lever. Yes

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I.	The second feed lever shall have a detent position and be used for drilling when a controlled rate of feed is required.	Yes	X	No				
m.	Feed rate, once set, shall not be affected by changes in engine RPM nor by changes in formation resistance unless the adjusted down pressure setting is reached.	Yes	X	No				
n.	A feed rate control shall be furnished for changing the rate of feed.	Yes	X	No				
о.	A pressure control shall be furnished for changing the maximum bit pressure.	Yes	X	No				
p.	The feed rate and pressure controls shall be operated by rotary type valves located on the front of the control panel within easy reach of the operator.	Yes	X	No				
Sec	ction 4: <u>DRILL POWER UNIT</u>							
a.	The power unit shall be a self-contained electric starting, air-cooled, heavy-duty 3-cylinder industrial type diesel engine, having not less than 197 cubic inch displacement and a minimum 57 gross intermittent horsepower.	Yes	X	No				
b.	The engine shall meet U.S. EPA Tier 4 interim (4i) emission certification.	Yes	X	No				
C.	The unit shall be equipped with a heavy-duty oil bath air cleaner, a governor and a replaceable full flow oil filter.	Yes	X	No				
d.	The unit shall have a 12-volt electric starting system consisting of a starter, alternator, battery and regulator.	Yes	X	No				
e.	The unit shall have a keyed ignition switch on the drill control panel and an electrically controlled engine throttle.	Yes	X	No				
f.	The power unit shall be equipped with a dry disc clutch not less than 13 inches in diameter and a transmission having not less than four speeds forward and one reverse.	Yes	X	No				
g.	When coupled with the drill unit, the engine shall have sufficient power to meet all requirements listed elsewhere in this specification.	Yes	X	No				
h.	Fuel for the drill shall come from the truck fuel tank.	Yes	X	No				
Section 5: UPRIGHT DRILL FRAME WITH PERMANENTLY COUPLED DRIVELINE HYDRAULIC SYSTEM:								
a.	The upright drill frame shall be hydraulically actuated permitting 90-degree fold over for traveling.	Yes	X	No				
b.	The depth of the upright part of the base frame shall be at least 8 inches for rigidity. $ \\$	Yes	X	No				
c.	Two 2.5 inch ID double-acting hydraulic cylinders that have a minimum of 1.375-inch diameter rods shall control the drill frame movement.	Yes	X	No				

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d. The direct-coupled mechanical drive train to the rotary shall not have to be disconnected when folding the upright drill frame over to a horizontal Yes [X]No travel position. The direct-coupled mechanical drive system shall incorporate the capability of drilling holes from vertical to 30 degrees from horizontal. Χ Yes Nο HYDRAULIC SYSTEM Section 6: This system shall have a heavy-duty engine driven hydraulic pump run independently of the gear train with a capacity of not less than 24.9 GPM X Yes Nο The system shall be equipped with a full-flow replaceable element Xhydraulic oil filter in the low pressure return line. Yes No A hydraulic oil cooler shall be furnished. X C. Yes No The hydraulic oil reservoir shall have adequate capacity and shall be equipped with level indicator sight eyes, a vented filler cap and a magnetic drain plug. X Yes Νo The hydraulic pump shall be driven from a point in the line of power transmission so that hydraulic power will be available whenever the engine is running. XYes No **DRILLER'S CONTROL PANEL** Section 7: All controls and gauges needed for the various drilling operations shall be placed in such a manner as to be easily accessible and convenient for the drill operator while permitting a view of the drilling operation at all times. X Yes No b. The driller's control panel shall be mounted on the left rear of the drill. X Yes No c. Keyed ignition switch and starter button. X Yes Nο d. Push-button emergency engine shut-off switch. X Yes Νo Electric engine throttle switch. X e. Yes No f. Transmission gear selector and lock-out clutch handle and auxiliary spindle brake set valve. Yes X No \Box Gauges: Hour meter, tachometer, engine oil pressure, engine oil temperature and volt meter in a locking box. X Yes No Hydraulic gauges for systems pressure and pull-down pressure. X Yes Nο X Feed rate, and feed pull-down pressure control. i. Yes No Feed lever and detented feed levers. X Yes No k. Hydraulic controls for all standard and provided optional components. Yes X Nο The drill controls shall be arranged in groups and situated for convenience according to frequency of use. X Yes No

BIDDER: __Central Mine Equipment Company

10A. Hoist One

than 3,200 pounds.

The first hydraulic hoist shall have a maximum pulling capacity of not less

Yes 🛚

No 🗌

BID No. 201400398 BIDDER: Central Mine Equipment Company For safety and convenience, the hydraulic levers shall have directional control that corresponds with cylinder movement. For example, moving the feed lever up shall extend the feed cylinders. X Yes No Section 8: SAFETY AND EMERGENCY SHUT-DOWN SYSTEM Push-button emergency shut-off switches shall be located on the control panel and on the right side of the main drill frame. Yes \propto No Two emergency multidirectional wobble shut-off switches with extended levers shall be located near the bottom of and parallel to the feed cylinders. X Nο Yes When any emergency shut-off switch is activated, a drive line brake is engaged to stop the spindle rotation in less than one revolution, the clutch is released and the engine is shut down. Yes \mathbf{X} Nο The system shall also include a lock-out type clutch handle that positively locks the clutch handle in the down or disengaged position and an X No Yes auxiliary spindle brake set valve. A neutral start switch is to be included that only allows the engine to start when the clutch is disengaged. Ď No A mast-raising alarm shall be included to alert the drill crew to look for overhead obstructions. XYes No Section 9: <u>MAST</u> The mast shall be secured by bolts to the upright drill frame and shall be removable from the drill when not needed. X Yes No With the mast in a vertical position, the sheaves shall be not less than 18 X Yes No feet from the base of the drill main frame. The maximum line pull of the draw works shall be evenly distributed on four cross-braced tubular members with an adequate margin of safety. Yes Х No Pairs of 8 inch diameter sheaves shall be aligned with the rope or wire rope they carry. Yes Νo Two hydraulic cylinders shall be provided to raise and lower the upright drill frame and mast. XYes No Section 10: **DRAW WORKS** The draw works shall include two hydraulic hoists and a hydraulic wireline hoist. X Yes Nο

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b.	Maximum line speed shall be not less than 100 feet per minute.	Yes	X	No	
c.	One hydraulic lever shall be furnished for controlling hoisting or lowering and rotation speed.	Yes	X	No	
d.	The hoist shall include approximately 60 feet of 3/8 inch diameter wire rope and a safety Shur-Lok hook.	Yes	Ž	No	
	10B. Hoist Two				
a.	The second hydraulic hoist shall have a maximum pulling capacity of not less than 1,800 pounds.	Yes	ř	No	
b.	Maximum line speed shall be not less than 200 feet per minute.	Yes	X	No	
c.	One hydraulic lever shall be furnished for controlling hoisting or lowering and rotation speed.	Yes	X	No	
d.	The hoist shall include at least 60 feet of 3/8 inch diameter wire rope and a safety Shur-Lok hook.	Yes	X	No	
	10C. Hydraulic Wireline Hoist				
a. b.	The hydraulic wireline hoist shall have a maximum pulling capacity of not less than 1800 pounds. Maximum line speed shall be not less than 200 feet per minute.	Yes Yes	X	No No	
c.	One hydraulic lever shall be furnished for controlling hoisting or lowering and rotation speed.	Yes	X	No	
d.	The hoist shall be capable of holding up to 900 feet of 3/16 inch diameter wireline cable. (cable not required)	Yes		No	
11.	SLIDING BASE, IN-OUT				
a.	A sliding base shall be furnished for moving the drill in and out so that the drill spindle can be positioned to facilitate alignment of augers and drill rods and to provide clearance from the hole for handling augers, casing and other down-hole tools.	Yes	E	No	
b.	With the slide base extended, the center of the auger drive shall be at least 15 inches from the rear of the truck to provide ample working room.	Yes	X	No	
c.	The in-out slide base shall have at least 15 inches of travel and shall be hydraulically operated.	Yes	X	No	
d.	The in-out slide base shall have a replaceable nylatron (or approved equal) wear plate between the metal slide surfaces.	Yes	X	No	
12.	SLIDING BASE, SIDEWAYS				
a.	A sliding base shall be furnished for moving the drill to either side so that the drill spindle can be positioned to facilitate alignment of augers and drill rods when starting or drilling a hole.	Yes	X	No	

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b.	The sideways slide base shall have at least 8 inches of travel and be \vdash hydraulically operated.	Yes	X)	No	
c.	The sideways slide base shall have nylatron (or approved equal) wear plate between the metal slide surface.	Yes	X	No	
13.	MUD PUMP ASSEMBLY				
a.	The mud or water pump shall be a progressive cavity type pump (3L6 or equal) and shall have an infinitely adjustable output of 0 to 36 gallons per minute and a maximum pressure of 225 PSI.	Yes	X	No	
b.	Pump output shall not be affected by changes in engine RPM.	Yes	X	No	
c.	Power for the mud pump shall be supplied by a hydraulic motor operated from the drill hydraulic system.	Yes	X	No	
d.	The assembly shall include a pressure gauge, a 1-1/2 inch pressure port with sufficient 1-1/2 inch high pressure hose to connect to the control panel, service tee with 1 inch bypass at the operator's panel and a 2 inch suction port.	Yes	[X]	No	П
e.	Provisions shall be made for drainage of the mud pump and lines.	Yes	X	No	
-	Tronsists shall be made to drawings of the mad pamp and mes.	, 00		110	
14.	STANDPIPE WITH HOSE TO CONTROL PANEL				
a. b.	A 1-1/2 inch diameter standpipe shall be mounted on the upright drill frame and connected by a 1-1/2 inch high pressure hose to the mud pump output at the control panel. A 1-1/2 inch high pressure hose with quick disconnect fittings shall	Yes	(X)	No	
	connect the standpipe to a stabilized side feed water swivel.	Yes	X	No	Ш
15.	HYDRAULIC HAMMER				
a.	A hydraulic hammer system shall be furnished that will lift a 140 pound drive weight 30 inches and completely release the weight for a 30 inch free fall.	Yes	X	No	
b.	No rope or cable shall be attached to the weight that might impede free fall.	Yes	X	No	
c.	The system shall have a minimum rate of at least 50 blows per minute.	Yes	X	No	
d.	The hammer shall be preset at the factory for a consistent weight fall height through the use of adjustable priority hydraulic control valves.	Yes		No	
e.	Once the valves are set, the fall height of the hammer weight shall not be affected by engine throttle adjustments.	Yes	Č	No	
f.	The fall height shall have a tolerance of plus or minus ½ inch.	Yes		No	
g.	A method for visual verification of the fall height of the weight while the hammer is in operation shall be provided.	Yes	X	No	
h.	The hammer shall be mounted on one single-acting hydraulic cylinder				

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BIC	No. 201400398	BIDDER:	Central	Mine	Equipmen	nt (Compar	ny	
	which is dedicated to the operation of attached to the upright drill frame opp			all be	Yes	X	No		
i.	The hammer device shall be hydrauli hydraulic cylinder through 60 inches			is	Yes	K	No		
j.	A 140 pound drive weight shall be fur	nished.			Yes	X	No		
k.	A safety feature shall be furnished the operating if the anvil is not in place.	at will prevent	the hammer f	rom	Yes	X	No		
16.	ROD CLAMP AND BREAKOUT DEV	ICE							
a.	A rod clamp that hydraulically holds of	Irill rod or pipe	e shall be furni	ished.	Yes	K	No		
b.	The device shall swing on and off the right rear leveling jack and shall have			r the	Yes	X	No		
c.	The rod clamp shall store flush with the way when drilling with auger tools		platform and	out of	Yes	X	No		
d.	A hydraulic breakout wrench shall be	furnished.			Yes	X	No		
17.	HYDRAULIC LEVELING JACKS								
a.	Heavy-duty hydraulic leveling jacks shoperated from the control panel at the			dividually	Yes	X	No		
b.	The jacks shall provide adequate leve and rigid enough to easily support the the loads generated when retracting of	e total weight			Yes	K	No		
c.	Check valves shall be furnished in the slippage of the jacks while the drill is			eakage o	r Yes	X	No		
d.	The chrome-plated jack piston rods sl safeguard them from damage.	hall be comple	tely enclosed	to	Yes	ĸ	No		
e.	Two jacks shall be mounted at the recorner.	ar of the platfo	orm, one on ea	ach	Yes	X	No		
f.	The maximum cylinder travel shall no	t be less than	36 inches.		Yes	X	No		
g.	The minimum outside diameter of the with a 4 inch bore and 2.5 inch diameter			.5 inche	s Yes	K	No		
h.	One jack shall be mounted at the cent	ter front of the	e truck.		Yes	K	No		
i.	The maximum cylinder travel shall not	t be less than	36 inches.		Yes	X	No		
j.	The minimum outside diameter of the with a 4 inch bore and 2.5 inch diameter			.5 inche	yes	K	No		

k. A heavy-duty steel channel front bumper with tow shackles shall be

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	provided.	Yes	X	No				
18.	18. DRILL PLATFORM							
a.	The drill platform shall be constructed from structural steel members and 12 gauge safety tread deck plate.	Yes		No				
b.	A watertight tool box shall be provided on the passenger side below the platform deck ahead of the rear wheels.	Yes	X	No				
c.	Drill rod and auger racks shall be furnished above the deck.	Yes	K	No				
d.	LED running/clearance lights shall be provided.	Yes	\boxtimes	No				
e.	The platform width shall not exceed 96 inches.	Yes	X	No				
f.	The platform shall be for an 84 inch CA truck.	Yes		No				
g.	An underbody auger rack shall be furnished on the driver's side of the truck platform.	Yes	K	No				
h.	A folding driller's step at the left rear corner of the platform shall be supplied.	Yes	K	No				
i.	The drill platform shall be undercoated.	Yes	X	No				

For information purposes, the chassis NCDOT intends to furnish for the installation of the drill covered in this bid spec will be as follows.

TRUCK: New, current year model FORD TRUCK - Model F-550 Super Duty (4 x 4) with 165" WB, 84" CA, 19,500 pound GVW, including the following:

7,000 pound front drive axle, with manual locking hubs 7,000 pound front springs
13,660 pound rear axle, 4.88 ratio, with limited slip
13,660 pound rear springs, including auxiliary springs
6.7L diesel engine, 400 HP, 725 ft-lbs torque
6-speed automatic transmission
2-speed transfer case
LT225/70SR19.5G tires
All-terrain tread
19.5 x 6 disc wheels
Hydraulic power brake system
40 gallon fuel tank
Engine block heater
17.8 SM frame, 36,000 psi
Rear axle spacers (86S option)

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BIDDER: Central Mine Equipment Company

Front frame extension, CME installed 130 amp alternator 2 - 750CCA batteries 40-20-40 seat with console Power steering Front and rear shock absorbers